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Date: September 28, 1998

Attorney Docket No.: DAVOX-142XX

BOX PATENT APPLICATION

Honorable Commissioner of Patents and Trademarks  
Washington, D.C. 20231

Sir:

Transmitted herewith for filing is the **patent application** of:

**Inventor:** Malcom B. Strandberg

**Entitled:** SYSTEM AND METHOD FOR PROVIDING AN AUTOMATIC TELEPHONE CALL BACK FROM  
INFORMATION PROVIDED AT A DATA TERMINAL

Enclosed are:

- ☒ Declaration and Power of Attorney (original signature)
- ☒ An Assignment of the invention to: Davox Corporation
- ☐ A Certified copy of a \_\_\_\_\_ application
- ☒ A Verified statement re small entity status (\$1.9 and \$1.27)- Small Business Concern
- ☐ Citation of Art including 0 references
- ☒ 4 sheets of informal drawings (one set)
- ☐ Other:
- ☐ Continuation-in-part application of application Serial No. \_\_\_\_\_,  
filed \_\_\_\_\_
- ☐ \_\_\_\_\_ is hereby appointed Associate Attorney by:  
Registration No.:

Attorney of Record: Daniel J. Bourque  
Registration No.: 35,457

CLAIMS FILED:	MINUS BASE:	EXTRA CLAIMS:	RATE:	BASIC FEE:
				\$790.00
Independent 3	- 3	=	x \$82.00 =	
Total 28	- 20	= 8	x \$22.00 =	\$176.00
<input type="checkbox"/> Multiple Dependent Claims (1st presentation)			+ \$270.00 =	
SUBTOTAL FILING FEE				\$966.00
Small-Entity filing, divide by 1/2. (Note: verified statement must be attached per \$1.9, \$1.27, \$1.28.)				\$483.00
TOTAL FILING FEE				\$483.00

- ☒ The filing fee has been calculated above; check No. 5342 in the amount of \$ 523 is enclosed, specifically \$483 for filing fees and \$40 for recordation of assignment.
- ☐ The filing fee will be submitted at a later date.
- ☒ The Commissioner is hereby authorized to charge payment of any additional filing fees under \$1.16 associated with this communication or credit any overpayment to Deposit Account No. 02-3285.

SUBMIT IN TRIPLICATE

Attorney of Record: Daniel J. Bourque  
Registration No.: 35,457

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application : Malcom B. Strandberg  
Filed : Herewith  
For : SYSTEM AND METHOD FOR PROVIDING AN  
AUTOMATIC TELEPHONE CALL BACK FROM  
INFORMATION PROVIDED AT A DATA TERMINAL  
Attorney's Docket : DAVOX-142XX

Express Mail Mailing Number - EM593 269 445US  
Date of Deposit - 9/28/98

I hereby certify that the following items are being deposited with the United States Postal Service "Express Mail Post Office to Addressee" service under 37 CFR 1.10 on the date indicated above and as addressed to BOX PATENT APPLICATION, Commissioner of Patents and Trademarks, Washington, D.C. 20231:

U.S. Patent application of Malcom B. Strandberg, entitled SYSTEM AND METHOD FOR PROVIDING AN AUTOMATIC TELEPHONE CALL BACK FROM INFORMATION PROVIDED AT A DATA TERMINAL, consisting of

Specification includes:

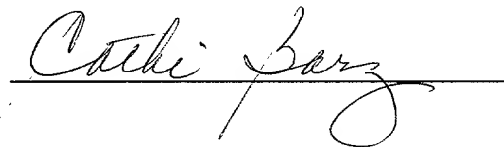
PP 1 through 21 of Detailed Description;  
PP 22 through 29 of claims 1 through 28; and  
PP 30 of Abstract

Drawings as follows (one copy informal): First sheet of Fig. 1; Second sheet of Fig. 2; Third sheet of Fig. 3; Fourth sheet of Fig. 4.

A Declaration and Power of Attorney, together with a cover letter in triplicate; a Verified Statement claiming small entity status; and an Assignment of the invention and application for recording of Malcom B. Strandberg to Davox Corporation comprising 3 pages (with cover letter in triplicate); and check # 5342 in the amount of \$523 to cover the filing fees of \$483 and an additional \$40.00 to cover the Assignment recording fee.

The above items are deposited with signatures and dated by the filing attorney as appropriate.

Cathi Barz

A handwritten signature in cursive script, reading "Cathi Barz", written over a horizontal line.

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

**APPLICANT:** Malcom B. Strandberg

**ATTORNEY**

**DOCKET NO.:** DAVOX-142XX

**SERIAL NO.:**

**EXAMINER:**

**FILED:** Herewith

**GROUP NO.:**

**PATENT NO.:**

**ISSUED:**

**ENTITLED:** SYSTEM AND METHOD FOR PROVIDING AN AUTOMATIC TELEPHONE CALL BACK  
FROM INFORMATION PROVIDED AT A DATA TERMINAL

---

**VERIFIED STATEMENT AS SMALL ENTITY**

Honorable Commissioner of Patents and Trademarks  
Washington, D.C. 20231

Sir,

**THE UNDERSIGNED DECLARE(S) :**

Exclusive rights in the above-identified invention reside in the "small entity(ies)" defined and named below, and "small entity" fees are appropriate. Qualification as a small entity is based upon the appropriately checked statements below:

☐ **INDEPENDENT INVENTOR(S)**

The below-signing independent inventor(s) has (have) not assigned, granted, conveyed or licensed, and is (are) under no obligation under contract or law to assign, grant, convey or license any rights in the invention to any person who could not likewise be classified as an independent inventor under 37 CFR 1.9(c) if that person had made the invention, or to any concern which would not qualify as a small business concern under 37 CFR 1.9(d) or a nonprofit organization under 37 CFR 1.9(e).

Attorney

Docket No.: DAVOX-142XX

**[X] SMALL BUSINESS CONCERN**

The below-identified small business concern qualifies as a small business as defined in 13 CFR 121.3-18, and reproduced in 37 CFR 1.9(d), for purposes of paying reduced fees under Section 41(a) and (b) of Title 35, in that the number of employees, including those of its affiliates, which does not exceed 500 persons, and it has not assigned, granted, conveyed or licensed, and is under no obligation under contract or law to assign, grant, convey or license, any rights in the invention to any person who could not be classified as an independent inventor if that person had made the invention, or to any concern which would not qualify as a small business concern under 37 CFR 1.9(d) or a nonprofit organization under 37 CFR 1.9(e).

Concerns are affiliates of each other when, either directly or indirectly, one concern controls or has the power to control the other, or a third party controls or has the power to control both. The number of employees of the business concern is the average over the fiscal year of the persons employed during each of the pay periods of the fiscal year. Employees are those persons employed on a full-time, part-time or temporary basis during the previous fiscal year of the concern.

**[ ] NONPROFIT ORGANIZATION** (Check additional applicable box.)

The below-identified nonprofit organization qualifies as a small entity under 37 CFR 1.9(e) in that it constitutes:

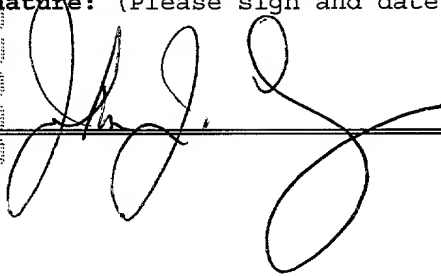
1. ☐ a university or other institution of higher education located in any country; or
2. ☐ an organization of the type described in Section 501(c)(3) of the Internal Revenue Code of 1954 (26 USC 501(c)(3)) and exempt from taxation under Section 501(a) of the Internal Revenue Code (26 USC 501(a)); or
3. ☐ any nonprofit scientific or educational organization qualified under a nonprofit organization statute of a state of the United States (35 USC 201(i)); or
4. ☐ any nonprofit organization located in a foreign country which would qualify as a nonprofit organization under paragraphs (e)(2) or (3) of Rule 1.9 if it were located in the United States.

The undersigned acknowledge(s) the duty to file, in this application or patent, notification of any change in status resulting in loss of entitlement to small entity status prior to paying, or at the time of paying, the earliest of the issue fee or any maintenance fee due after the date on which status as a small entity is no longer appropriate (37 CFR 1.28(b)).

Attorney

Docket No.: DAVOX-142XX

The below-signing individual(s) hereby declare(s) that (he, she, they) are authorized to execute this statement on behalf of the small entity; that all statements made herein of (his, her, their) own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application, any patent issuing thereon, or any patent to which this verified statement is directed.

Name of Small Entity: (Independent Inventor/Small Business/Nonprofit)	
Davox Corporation	
Address of Small Entity: (Street, City, State or Country, Zip Code)	
6 Technology Park Drive Westford MA 01886	
Name of Person Signing: (Small Business/Nonprofit)	
John J. Connolly	
Title of Person Signing: (Small Business/Nonprofit)	
Vice President - Finance	
Signature: (Please sign and date in permanent ink.)	Date signed:
X 	X 9/24/98

SYSTEM AND METHOD FOR PROVIDING AN AUTOMATIC TELEPHONE  
CALL BACK FROM INFORMATION PROVIDED AT A DATA TERMINAL

FIELD OF THE INVENTION

The present invention relates to telephony systems and more particularly, to a system and method for providing an automatic telephone call back in response to a request provided from a data terminal.

BACKGROUND OF THE INVENTION

Telephony call centers, which place outbound calls and receive inbound calls (often called call campaigns), typically utilize a telephone call center management system to help automate much of the process. The telephone call center management system controls, among other functions, the dialing of outbound telephone numbers from a predefined, sorted call list having a number of customer call records. These customer call lists may be downloaded from a call record source, such as a host computer, to the telephone call center management system once during a 24 hour period, often during the non-busy early hours of the morning, or may be continuously and dynamically downloaded for dynamic updating of call records within a call list. The telephone call center management system automatically connects outbound calls and

1 inbound calls to available operators or agents for handling.

2 In the past, the overwhelming majority of customers or  
3 potential customers (collectively "inquiring parties") contacted  
4 the call center by telephone to obtain information. These  
5 inquiring parties may be calling for many different reasons. For  
6 example, the inquiring parties may want information on the  
7 company's products or services, or may want information on their  
8 existing account with the company. Often there are no agents  
9 available at the company to provide the requested information, and  
10 the inquiring party must wait on hold for an available agent,  
11 receive the information by way of recorded messages, or call back  
12 at another time.

13 With the advent of global or large scale computer networks  
14 such as the Internet (also known as the World Wide Web), it is now  
15 possible for companies to provide information "on-line" that is  
16 accessible by its customers or potential customers via a data  
17 terminal (e.g. a PC) connected to the network. A company may  
18 provide "on-line" information about products and/or services that  
19 might be of interest to an inquiring party, as well as information  
20 on the status of a party's account. One way of providing on-line  
21 information is with hypertext documents on the World Wide Web  
22 created using Hypertext Markup Language (HTML). By browsing  
23 through these "web pages" using the data terminal, the inquiring  
24 party can obtain information in the form of text, graphics and/or

1 sound.

2 Although the Internet or other such computer network provides  
3 an additional medium for communicating information to inquiring  
4 parties, a party may still want assistance from a "live" agent.  
5 Some "web pages" allow inquiring parties to request a call back by  
6 including a field for the inquiring party to provide a telephone  
7 number or other such information related to contacting the party  
8 with a "live" agent. These requests are typically transmitted to  
9 the company, for example, in the form of electronic mail and  
10 stored in a file. The telephone numbers and other relevant  
11 information are then manually entered into an existing telephone  
12 call center management system. The call back is then made at a  
13 later, less convenient time using the existing telephony system,  
14 e.g., by having an agent manually call back or by calling back and  
15 placing the party on hold. If the inquiring party needs  
16 assistance, e.g., with an account, a product/service, or the like,  
17 the existing systems are unable to provide that assistance at the  
18 time requested by the inquiring party.

19 An immediate call back is often the ideal time for responding  
20 to a request by the inquiring party. The inquiring party is  
21 interested in this particular product, service, or information at  
22 the moment the request is made and is likely to be proximate to a  
23 telephone. Providing an immediate connection to an agent,  
24 however, presents an additional problem. One common way to



1 connect to the Internet / World Wide Web is by using a PC with a  
2 modem that dials in to an Internet Service Provider (ISP) over the  
3 Public Switched Telephone Network (PSTN). If the only available  
4 telephone line is being used for connecting to the network, an  
5 immediate call back may not be possible since the inquiring party  
6 is likely to still be connected to the network (i.e., "on-line")  
7 when the attempted call back is made. When dialing outbound  
8 calls, existing telephony systems will typically treat a busy  
9 signal as a failed attempt and will schedule a recall at a later  
10 point in time. Thus, the inquiring party will not receive the  
11 assistance as soon as possible after the request has been made.

12 As the usage of the Internet and other global computer  
13 networks increases, an increasing number of individuals will want  
14 to use this medium of communication to contact companies for  
15 requesting information. Existing telephone call center management  
16 systems are not integrated with global computer networks in a  
17 manner that allows a company to automatically and efficiently  
18 respond to requests made over the global computer network by  
19 inquiring parties with call backs at the most convenient time.

20 Accordingly, what is needed is a system and method for  
21 providing an automatic telephone call back to an inquiring party  
22 who has provided a request to a company from a remote data  
23 terminal. What is also needed is an automatic call back system  
24 and method that employs call scheduling and predictive dialing to

1 ensure that a call back is made at a time convenient to the  
2 inquiring party, e.g. immediately or at another time specified by  
3 the inquiring party.

#### 4 SUMMARY OF THE INVENTION

5 The present invention features a system and method for  
6 providing a telephone call back from call back data transmitted  
7 over a data path, such as a global computer network, using a data  
8 terminal at a remote location. The system includes a data path  
9 interface coupled to the data path, for receiving the request, for  
10 identifying the call back data, and for placing the call back data  
11 into at least one call record store. The system further includes  
12 an automatic dialing system responsive to the call record store,  
13 for retrieving the telephone numbers in the call record store,  
14 automatically calling the numbers, and connecting to an available  
15 agent if a call is answered.

16 The automatic dialing system preferably includes a call scheduler,  
17 for ordering and scheduling the telephone numbers to be called,  
18 and a predictive dialer, responsive to the ordered telephone  
19 numbers, for initiating dialing of each of the numbers. The  
20 predictive dialer preferably includes a call pacer that paces  
21 dialing of the telephone numbers using a pacing algorithm.

22 The present invention also features a method for providing a  
23 telephone call back from a request made by an inquiring party at

1 remote location. The request includes call back data transmitted  
2 over a data path, such as the global computer network, from a  
3 terminal at the remote location. The method comprising the steps  
4 of: receiving the request transmitted from the terminal at the  
5 remote location; identifying the call back data including at least  
6 one telephone number to be dialed; placing the call back data into  
7 a call record store; retrieving telephone numbers to be dialed  
8 from the call record store; scheduling the telephone numbers to be  
9 dialed; automatically dialing each of the telephone numbers as  
10 scheduled over a telephone line; and connecting the telephone  
11 line to a telephone of an available agent, if an answer is  
12 detected.

13 In one embodiment, the method includes the step of attempting to  
14 immediately connect the inquiring party to an available agent, for  
15 example, using the global computer network. The method also  
16 includes scheduling at least one of the numbers for an immediate  
17 call back and scheduling at least one of the numbers for a call  
18 back at a time to call provided by the inquiring party in the call  
19 back data. If no connection is made, the method includes the step  
20 of adding the telephone number to a future call campaign.

21

## 22 BRIEF DESCRIPTION OF THE DRAWINGS

23 These and other features and advantages of the present  
24 invention will be better understood by reading the following

1 detailed description, taken together with the drawings wherein:

2 FIG. 1 is a schematic block diagram of an automated telephone  
3 call back system, according to the present invention, that  
4 receives requests from remote locations over a data path;

5 FIG. 2 is a schematic block diagram of the automated  
6 telephone call back system, according the preferred embodiment of  
7 the present invention;

8 FIG. 3 is a schematic block diagram of the automated  
9 telephone call back system used with various types of data paths,  
10 according to the present invention; and

11 FIG. 4 is a flow chart illustrating the method of providing  
12 an automatic call back, according to the present invention.

13 DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

14 The automated telephone call back system 10, FIG. 1,  
15 according to the present invention, provides an automatic  
16 telephone call back to an inquiring party (e.g., a customer or  
17 potential customer) who has requested assistance from a "live"  
18 agent 12a-12c at a call center in a company or other organization.  
19 The request is made from a remote location 14a-14d that includes a  
20 data entry device, such as a PC, connected to the automated  
21 telephone call back system 10 by way of a data path 16. The data  
22 path 16 can be established through the Public Switched Telephone  
23 Network (PSTN), the Internet / World Wide Web, an intranet, any

1 type of Wide Area Network (WAN), any type of Local Area Network  
2 (LAN), and/or any other type of communication medium, as will be  
3 described in greater detail below.

4 The inquiring party typically makes the request after making  
5 an initial inquiry for information, such as product/service or  
6 customer account information. This information is typically  
7 provided by an information server 18 that is accessed by the  
8 inquiring party at the remote location 14a-14d by way of the data  
9 path 16. In one example, the information server 18 is a web  
10 server that presents the information in the form of "web pages"  
11 including on-line forms for entry of call back data used to make a  
12 call back (e.g., telephone number, call back time) as well as  
13 other inquiring party data (e.g., name, account number,  
14 products/services of interest), as will be described in greater  
15 detail below.

16 When a call back request is made, call back data and other  
17 data is transmitted over the data path 16 to the automated  
18 telephone call back system 10 either directly or by way of the  
19 information server 18. The automated telephone call back system  
20 10 processes the request and schedules a call back at a time when  
21 the inquiring party is likely to be available, e.g. immediately  
22 following the request or at a desired time specified by the  
23 inquiring party.

24 According to the preferred embodiment, the automated

1 telephone call back system 10, Fig. 2, includes an automated  
2 dialer system 20, for processing outbound call campaigns, and a  
3 data path interface 22, for providing an interface or gateway  
4 between the automated dialer system 20 and the data path 16 over  
5 which the call back request is made. According to one example,  
6 the automated dialer system 20 is implemented as part of a  
7 telephony system, such as the type sold under the name UNISON® by  
8 Davox Corporation, Westford, Mass. This type of telephony system  
9 is disclosed in greater detail in U.S. Patent No. 5,592,543 issued  
10 January 7, 1997, assigned to the assignee of the present  
11 application and incorporated herein by reference. In the  
12 telephony system, the agents 12a-12c each have a headset 24a-24c  
13 or other voice processing device and a computer terminal 26a-26c  
14 or other type of data input/output device connected to the  
15 automated dialer system 10. The data path interface 22, the  
16 automated dialer system 20, the agent terminals 26a-26c, and other  
17 components of the system 10 are connected with a data path 34,  
18 such as an ethernet network.

19 The data path interface 22 receives the call back data and  
20 other inquiring party data transmitted over the data path 16 and  
21 routes the call back data (e.g., telephone number, and time to  
22 call) to a call record store 28 storing the call back data as a  
23 list of call records. The call record store 28 can be a database  
24 record, computer memory array, disk file, or any other storage

1 medium. The call record store 28 can be dynamically updated with  
2 new call records as call back requests are received by the data  
3 path interface 22. Other data pertaining to the inquiring party  
4 (e.g., name, address, account number, products/services of  
5 interest), may also be stored in a host account database 29. If  
6 the inquiring party has been previously contacted (e.g., an  
7 existing customer), additional data may be merged with the host  
8 account database 29. The host account database 29 can be updated  
9 by an upload of new data for each account at the end of a call  
10 campaign or at the end of a predetermined time interval (e.g., the  
11 end of the day). The host account database 29 can also be updated  
12 online by way of a link 31 to the agent terminals 26a-26c.  
13 Further, the host account database 29 can be updated by the user,  
14 e.g., by way of a link 33 from the information server 18.

15 The automated dialer system 20 then processes the call  
16 records in the call record store 28 as an outgoing telephone call  
17 campaign. The automated dialer system 20 retrieves the call  
18 records from the call record store 28 and processes the call  
19 records, for example, according to preselected system scripts.  
20 The automated dialer 20 automatically dials the telephone numbers  
21 within the call records over one of the telephone (trunk) lines  
22 32. The automated dialer system 20 monitors the status of the  
23 call progress signals on the telephone lines 32, and when an  
24 answer is detected, connects the call to a headset 24a-24c of the

1 available agent. Other information pertaining to the called party  
2 can be linked by the automated dialer system 20 from the host  
3 account database 29 to the terminal 26a-26c of the available  
4 agent. The linked host data is preferably displayed  
5 simultaneously at the terminal 26a-26c of the agent connected to  
6 the call, for example, using software available from Davox Corp.  
7 such as Smart Buttons, Sixth Sense, or the host Java applets in  
8 LYRICall.

9 The automated dialer system 20 preferably includes a call  
10 scheduler 36 for determining the optimum time to call each of the  
11 numbers and for arranging the list call records accordingly. The  
12 call scheduler 36 is typically implemented as a software program  
13 and is described in U.S. Patent Application No. 08/699,292  
14 entitled "Call Record Scheduling System And Method" assigned to  
15 the assignee of the present invention and incorporated herein by  
16 reference. The call scheduler 36 will prioritize the call records  
17 based upon call back data specified by the inquiring party. If no  
18 call back time is specified, the call records are given an  
19 immediate call back priority since the inquiring party is likely  
20 to be proximate to the telephone. Immediate call backs can be  
21 repeated until a non-busy signal is detected since the inquiring  
22 party may be using the telephone line to access the data path 16  
23 (e.g., using a modem to connect to the Internet through an  
24 Internet Service Provider). One example of this type of system is



1 disclosed in greater detail in co-pending, commonly-owned  
2 application Serial No. 09/057,749 filed April 9, 1998, entitled  
3 SYSTEM AND METHOD FOR PROVIDING AN AUTOMATIC TELEPHONE CALL BACK  
4 TO A TELEPHONE LINE BEING USED TO ACCESS A COMPUTER NETWORK, and  
5 incorporated herein by reference.

6 The automated dialer system 20 preferably includes a  
7 predictive dialer 30 that utilizes a call pacing algorithm which  
8 is designed to optimize the time utilization by the telephone call  
9 agents. A description of one type of predictive dialer and call  
10 pacing algorithm is disclosed in U.S. Patent No. 5,295,184  
11 assigned to the assignee of the present application and  
12 incorporated herein by reference. The predictive dialer 30  
13 controls the automatic dialing of the call back numbers as well as  
14 the dialing of numbers in other active outbound campaigns to  
15 minimize the amount of time a called party will have to spend on  
16 hold.

17 The data path interface 22 can include a number of different  
18 types of interfaces depending upon the type of data path 16 being  
19 used to transmit the call back data. According to the exemplary  
20 applications of the present invention, the data path 16, Fig. 3,  
21 between the remote location 14a-14d and the automated telephone  
22 call back system 10 is established using one or more of the  
23 following: a direct data path 60, (e.g., a direct telephone line  
24 with a modem or an ethernet / token ring line); a global computer

1 network 62 (e.g., the Internet / World Wide Web); and a telephone  
2 network 64 (e.g., the PSTN). The present invention contemplates  
3 using other types of data paths or communications media including  
4 other types of local area networks, wide area networks, or global  
5 information networks.

6 Where the direct data path 60 is used, a data terminal 70 at  
7 the remote location 14a, such as a mall or other public location,  
8 is directly connected to the information server 18, for example,  
9 using a direct telephone line with a modem or a Local Area Network  
10 (LAN) line to a LAN, such as an Ethernet or Token Ring network.  
11 In this example, the data path interface 22 provides an interface  
12 to that particular type of LAN, for communicating with the data  
13 terminal 70. The data terminal 70 can include a telephone with a  
14 direct telephone line to the automated dialer system 20 to allow  
15 telephonic communication with the inquiring party at the terminal  
16 70. If a telephone is provided with the data terminal 70, an  
17 immediate call back can be made to the predetermined telephone  
18 number while the inquiring party is at the terminal 70. If no  
19 telephone is provided with the data terminal 70, the inquiring  
20 party can specify a telephone number and time for the return call.

21 Where the global computer network 62 is used to establish the  
22 data path 16, the remote location 14b, 14c includes a computer  
23 terminal 72, 74 connected to the global computer network 62,  
24 either directly or through the telephone network 64. In this

1 example, the information server 18 includes a computer that  
2 generates hypertext documents using Hypertext Markup Language  
3 (HTML) containing the information to be accessed by the inquiring  
4 party. The computer terminal 72, 74 is used by the inquiring  
5 party to access the information and includes a user interface to  
6 display the hypertext documents provided by the information server  
7 18 in the form of text, graphics, pictures, audio, and data (text)  
8 entry fields (commonly known as "web pages").

9 If assistance is needed from a live agent, a document is  
10 provided by the information server 18 that includes a data entry  
11 form requesting the data necessary to make a call back as well as  
12 other data pertinent to the request for assistance. The creation  
13 of data entry fields and the transmission of the entered data to  
14 the automated telephone call back system can be performed by a  
15 Common Gateway Interface (CGI) script that runs on the server 18  
16 or a JAVA language program that runs on the computer terminal 72,  
17 74.

18 The data is then transmitted from the computer terminal 72,  
19 74 to the automated telephone call back system 10 over the global  
20 computer network 62. In this example, the data path interface 22  
21 provides an interface to the global computer network 62, e.g., a  
22 direct connection to the Internet or a connection through the  
23 server 18, allowing the automated call back system 10 to receive  
24 the call back data and store the call back data as a call record

1 in the call record store 28. In one example, the data path  
2 interface 22 includes a TCP/IP port on a computer that will accept  
3 call back data in fixed fields. The call back data can be  
4 formatted using techniques (e.g., encryption, authentication,  
5 etc.) that are well known in the art for network protocols.

6 Once received by the data path interface 22, the data can be  
7 posted to call record store 28. If the call record store 28 is  
8 server maintained, a socket connection similar to the data path  
9 interface can be used to post the data to the call record store  
10 28. If the call record store 28 is a database, the data path  
11 interface 22 inserts or updates the appropriate table. If the  
12 call record store 28 is a file, the data path interface 22 appends  
13 to the end of the file. The automated dialer system 20 processes  
14 the call records in a call campaign, as described above, and based  
15 upon the request data, the call back can be made to a telephone  
16 76, 78 at the location 14b, 14c or any other telephone number  
17 specified by the inquiring party. In addition to computer  
18 terminals 72, 74, the present invention contemplates other devices  
19 capable of receiving and transmitting information over the  
20 Internet / World Wide Web.

21 The data path interface 22 can also interface the agent  
22 terminals 26a-26c to the global computer network 62, allowing the  
23 inquiring party to exchange data and/or audio messages with the  
24 agent over the global computer network 62. According to this

1 embodiment, the data path interface 22 includes well known  
2 firewall or proxy software to enable the agents 12a-12c to access  
3 the internet. To use the global computer network 62 as an audio  
4 data path to transmit audio in addition to data, the computer  
5 terminal 72, 74 and the agent terminal 26a-26c include voice over  
6 the internet packages, such as Webcall, Netmeeting, CU-See Me  
7 (Cornell University), and Cooltalk. Using voice over the internet  
8 or internet chat, an inquiring party at the computer terminal 72,  
9 74 can be immediately connected to an agent at the terminal 26a-  
10 26c for assistance.

11 A direct connection to the global computer network 62 is  
12 established where computer terminal 72 at the remote location 14b,  
13 such as an office, is directly connected to the global computer  
14 network 62, for example, through a LAN having a direct internet  
15 connection by way of a leased line. This remote location 14b can  
16 also include a telephone 76 connected to the telephone network 64  
17 on a telephone line 80 that is not used by the computer terminal  
18 72 to access the global computer network 62. The telephone line  
19 80 is thus available to receive a call back to telephone 76 while  
20 the computer terminal 72 is used to access the global computer  
21 network 62.

22 A connection to the global computer network 62 using the  
23 telephone network 64 is established where the computer terminal 74  
24 at the remote location 14c, such as the inquiring party's

1 residence, uses a modem 82 connected to a telephone line 84 into  
2 the telephone network 64. The modem 82 can be connected directly  
3 to the telephone line 84 or can be connected through a telephone  
4 78 at the location 14c. The computer terminal 74 accesses the  
5 global computer network 62 by using the modem 82 to dial in to a  
6 global computer network server 88, for example, maintained by an  
7 Internet Service Provider (ISP), which provides an interface  
8 between the telephone network 64 and the global computer network  
9 62. The present invention contemplates other types of "dial-up"  
10 connections to the internet using, for example, Integrated  
11 Services Digital Network (ISDN), a cellular telephone network, or  
12 other alternatives to conventional telephone connections.

13 For a "dial up" type connection, the same telephone line 84  
14 is typically used by both the telephone 78 to receive calls and  
15 the computer terminal 74 to access the global computer network 62.  
16 Thus, the telephone line 84 may not be available for a call back  
17 to the telephone 78 if the telephone line 84 is still in use to  
18 access the global computer network 62. The present invention also  
19 contemplates using a modem 82 having voice/data capabilities that  
20 allows the computer terminal 74 to interrupt data transmission to  
21 talk with an available agent and then resume data transmission.  
22 The present invention also contemplates using call waiting in a  
23 "friendly" way to disconnect the modem 82 when an immediate call  
24 back is made.

1 Another type of data path 16 is an audio data path, for  
2 example, provided through the telephone network 64, which is  
3 accessed by a telephone 90 at the remote location 14d. In this  
4 example, the telephone 90 is used by the inquiring party to access  
5 recorded audio information at the information server 18 by way of  
6 the telephone network, for example, by dialing an 800 number. If  
7 assistance is needed from a "live" agent, the request data can be  
8 entered by DTMF tones or audio (voice) input in response to  
9 recorded audio prompts. In this example, the data path interface  
10 22 includes an audio interface including, for example, a voice  
11 recognition unit (VRU) designed to encode audio responses as data,  
12 capable of being processed, stored, and retrieved digitally. One  
13 example of a VRU is disclosed in U.S. Patent No. 5,164,981  
14 assigned to the assignee of the present invention and incorporated  
15 herein by reference. After digitally encoding the data, the data  
16 path interface 22 stores the data as a call record in the call  
17 record store 28 and automatically performs a call back, as  
18 described above.

19 The automatic telephone call back method 300, Fig. 4,  
20 according to the present invention, begins when the data path  
21 interface 22 of the automated telephone call back system 20  
22 receives a request for assistance from an agent, step 310. In one  
23 embodiment, the automated telephone call back system 20 will  
24 attempt to immediately connect or transfer the inquiring party to

1 an available agent, step 320. An immediate connection can be  
2 made, for example, if the inquiring party is using a telephone to  
3 request the information or if the inquiring party is using a  
4 terminal that supports voice over the internet or internet chat.  
5 In this example, the immediate connection of inquiring parties to  
6 agents can be controlled using a web inbound electronic chat  
7 distributor, as disclosed in co-pending, commonly owned  
8 application Serial No. 09/052,514 filed March 31, 1998, entitled  
9 WEB INBOUND CHAT DISTRIBUTOR, and incorporated herein by  
10 reference. The web inbound electronic chat distributor will  
11 determine if an agent is available, step 322, and will connect the  
12 available agent to the inquiring party, step 324. If no agent is  
13 available, and the inquiring party is willing to wait, step 326, a  
14 hold message is played or displayed to the inquiring party until  
15 an agent becomes available, step 328.

16 If the inquiring party is not willing to wait for an agent or  
17 if immediate connection is not possible, the call back data (e.g.,  
18 the telephone numbers to be dialed and call back time) is  
19 identified by the data path interface 22, step 330, and relayed  
20 into the call record store 28, step 332. The automated dialer  
21 system 20 retrieves call records from the call record store, step  
22 334, and, based upon other call back data transmitted by the  
23 inquiring party, determines the most convenient time for a call  
24 back and schedules the call backs accordingly, step 336. Unless



1 the inquiring party specifies a different time, an immediate call  
2 back will be scheduled, since the inquiring party is likely to be  
3 proximate the telephone.

4 The telephone numbers are then automatically dialed either  
5 immediately or at the scheduled times, step 338, and the telephone  
6 lines 32 over which the call is being made are monitored.  
7 According to one example of the method where an immediate call  
8 back is made, the telephone lines 32 are monitored to determine if  
9 a busy signal is received, step 339, indicating that the telephone  
10 line connected to the telephone of the inquiring party is probably  
11 being used to connect to the global computer network 62. If a  
12 busy signal is detected, the predictive dialer will immediately,  
13 and in one embodiment continuously, redial the telephone number,  
14 step 341, for example, as disclosed in co-pending application  
15 Serial No. 09/057,749 referenced above. This will ensure the  
16 connection of the telephone call as soon as the telephone line is  
17 free.

18 If a connection is made, step 340, the inquiring party is  
19 connected to an available agent, step 324, by transferring the  
20 voice to the agent's telephone 24a-24c and by transferring any  
21 other relevant data pertaining to the called party to the agent's  
22 terminal 26a-26c. If no connection is made, step 340, the  
23 telephone number is scheduled for a future call campaign to be  
24 called at a later time, step 342.

1       Accordingly, the automated telephone call back system of the  
2 present invention provides an automatic call back to an inquiring  
3 party (e.g., customer or potential customer) in response to a  
4 request made by the inquiring party while accessing information  
5 over a data path. In addition, the automated dialer system has  
6 the capacity to efficiently process the call backs by scheduling  
7 the calls as the most convenient time (e.g. a time specified by  
8 the inquiring party), by automatically dialing and pacing the  
9 calls so that an agent capable of handling the call will be  
10 immediately available when a connection is made. Moreover, if the  
11 inquiring party makes the request while on the Internet, the  
12 present invention is capable of contacting the inquiring party as  
13 soon as possible after the inquiring party has stopped using their  
14 computer modem.

15       Modifications and substitutions by one of ordinary skills in  
16 the art are considered to be within the scope of the present  
17 invention which is not to be limited except by the claims which  
18 follow.

19   What is claimed is:

## CLAIMS

1        1.    A system for providing an automatic telephone call back  
2    from a request transmitted over a data path from a data terminal  
3    located at a first location, said request including call back data  
4    including at least a telephone number to be dialed, said system  
5    comprising:

6        a data path interface, coupled to said data path, for  
7    receiving said request over said data path, for identifying said  
8    call back data, and for placing said call back data into at least  
9    one call record store; and

10       an automated dialer system, located at a second location  
11    remote from said first location and coupled to said data path  
12    interface, and responsive to said at least one call record store,  
13    for automatically retrieving telephone numbers to be dialed from  
14    said call record store, and for processing said telephone numbers  
15    as an outbound telephone call campaign.

1       2.    The system of claim 1 wherein said data path is  
2    established using at least one of a direct data path, a global  
3    computer network, and a telephone network.

1       3.    The system of claim 1 wherein said data path is  
2    established using a global computer network and a telephone  
3    network.

1           4.    The system of claim 1 wherein said request further  
2 includes customer account identifying indicia.

1           5.    The system of claim 1 wherein said call back data  
2 further includes a time to call back.

1           6.    The system of claim 1 wherein said request further  
2 includes a message.

1           7.    The system of claim 6 wherein said message includes a  
2 voice message.

1           8.    The system of claim 6 wherein said message includes a  
2 textual message.

1           9.    The system of claim 6 wherein said message includes a  
2 series of DTMF tones.

1           10.   The system of claim 1 wherein said data terminal is a  
2 digital computer and said transmitted data includes digital data.

1           11.   The system of claim 1 wherein said automated dialer  
2 system further includes a call scheduler, responsive to said at

3 least one call record store, for ordering and scheduling said  
4 telephone numbers to be dialed.

1 12. The system of claim 11 wherein said automated dialer  
2 system further includes a predictive dialer, responsive to said  
3 ordered telephone numbers, for initiating dialing of each of said  
4 ordered telephone numbers.

1        13. A system for providing a telephone call back from a  
2 request transmitted over a global computer network from a data  
3 terminal located at a remote location, said request including call  
4 back data including at least a telephone number to be called, said  
5 system comprising:

6        a data path interface, connected to said global computer  
7 network, for interfacing with said global computer network and  
8 receiving said request over said global computer, for identifying  
9 said call back data, and for storing said call back data including  
10 said at least one telephone number in a call record store; and

11        an automated dialer system, responsive to said call record  
12 store, for retrieving said telephone numbers in said call record  
13 store and automatically calling said telephone numbers, said  
14 automated dialer system including:

15        a call scheduler, for ordering and scheduling said  
16 telephone numbers; and

17        a predictive dialer, responsive to said ordered  
18 telephone numbers, for initiating dialing of each of said  
19 ordered telephone numbers as scheduled, and for connecting an  
20 answered call to a telephone of an available agent coupled to  
21 said automated dialer system.

1        14. The system of claim 11 wherein said predictive dialer  
2 includes a call pacer that paces dialing of said telephone numbers

3 according to a call pacing algorithm.

1 15. The system of claim 13 wherein said data path interface  
2 interfaces said global computer network to agent terminals  
3 connected to said automated dialer system.

1 16. The system of claim 13 wherein said request further  
2 includes customer account identifying indicia.

1 17. The system of claim 13 wherein said call back data  
2 further includes a time to call back.

1 18. The system of claim 17 wherein said call scheduler is  
2 responsive to said time to call back, for scheduling dialing of  
3 said at least one telephone number at approximately said time to  
4 call back.

1 19. The system of claim 13 wherein said call scheduler  
2 schedules at least one of said telephone numbers for immediate  
3 dialing.

1 20. The system of claim 13 wherein said call back data is  
2 transmitted over said global computer network using a CGI script.

1           21. The system of claim 13 wherein said call back data is  
2 transmitted over said global computer network using a JAVA  
3 language script.



1        22. A method for providing a telephone call back from a  
2 request made by an inquiring party at a remote location, wherein  
3 said request includes call back data transmitted over a data path  
4 from a terminal at said remote location, said call back data  
5 including at least a telephone number to be dialed, said method  
6 comprising the steps of:

7        receiving said request transmitted from said terminal at said  
8 remote location;

9        identifying said call back data including at least one  
10 telephone number to be dialed;

11       placing said call back data into a call record store;

12       retrieving telephone numbers to be dialed from said call  
13 record store;

14       scheduling said telephone numbers to be dialed;

15       automatically dialing each of said telephone numbers as  
16 scheduled over a telephone line; and

17       connecting said telephone line to a telephone of an available  
18 agent, if an answer is detected.

1       23. The method of claim 22 further including the step of  
2 attempting to immediately connect said inquiring party to an  
3 available agent over said data path.

1       24. The method of claim 22 wherein said data path is

2 established using a global computer network.

1 25. The method of claim 24 further including attempting to  
2 immediately connect said inquiring party to an available agent  
3 over said global computer network.

1 26. The method of claim 22 wherein at least one of said  
2 telephone numbers is scheduled for an immediate call back.

1 27. The method of claim 22 further including the step of  
2 adding at least one of said telephone numbers to a future call  
3 campaign, if no connection is made.

1 28. The method of claim 22 wherein said call back data  
2 includes at least one time to be called back, wherein said  
3 telephone numbers are scheduled according to said time to call  
4 back.



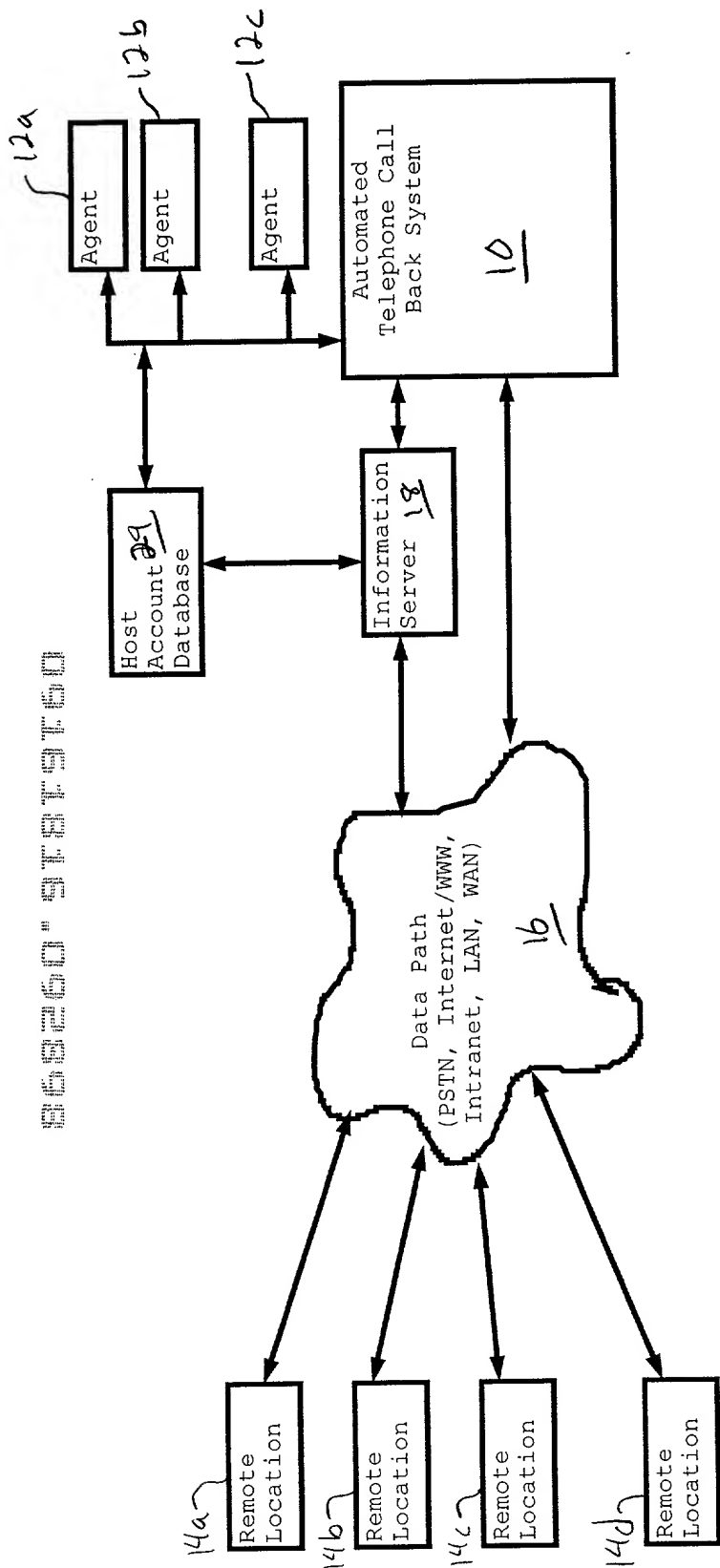


Fig. 1

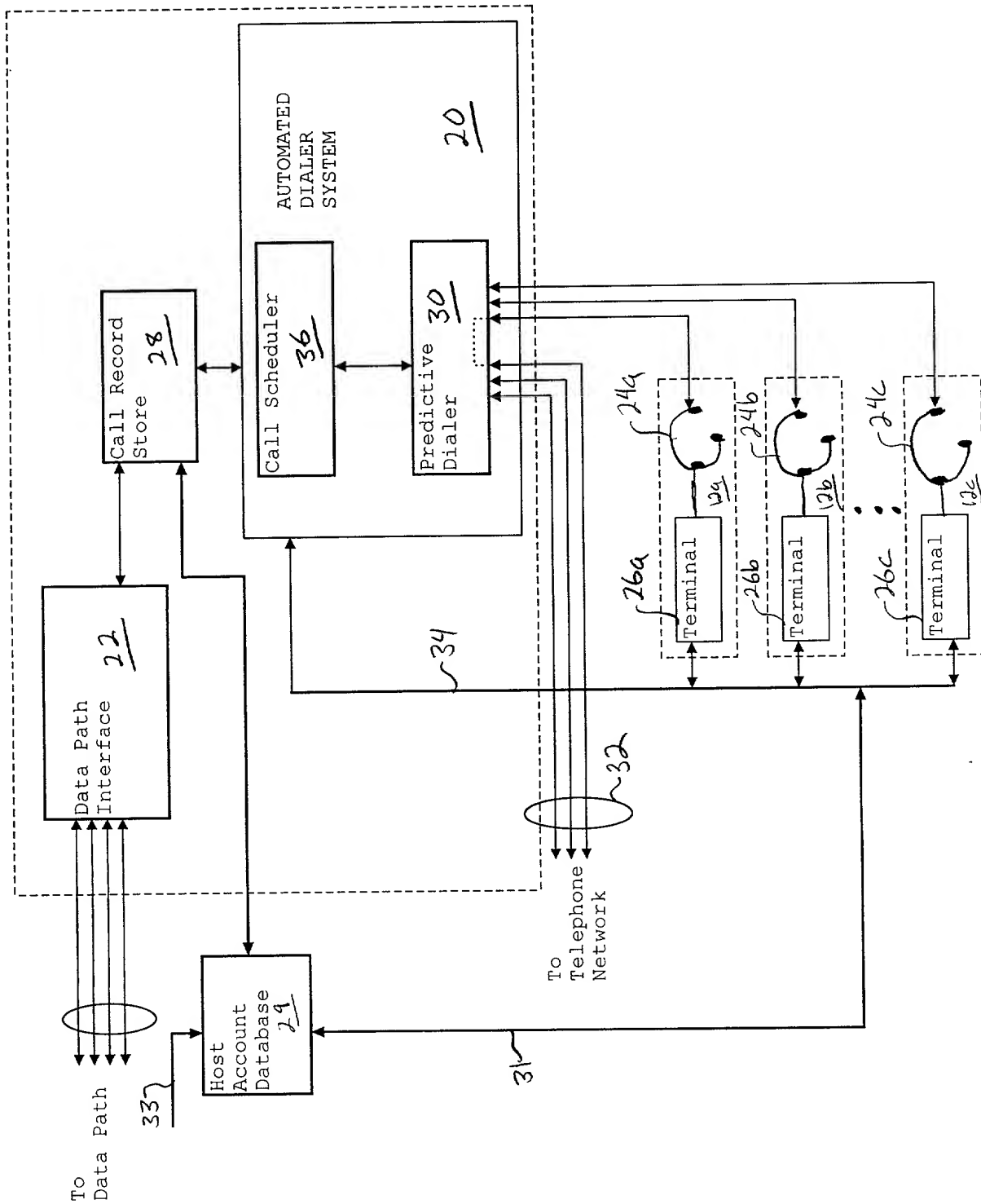


Fig. 2

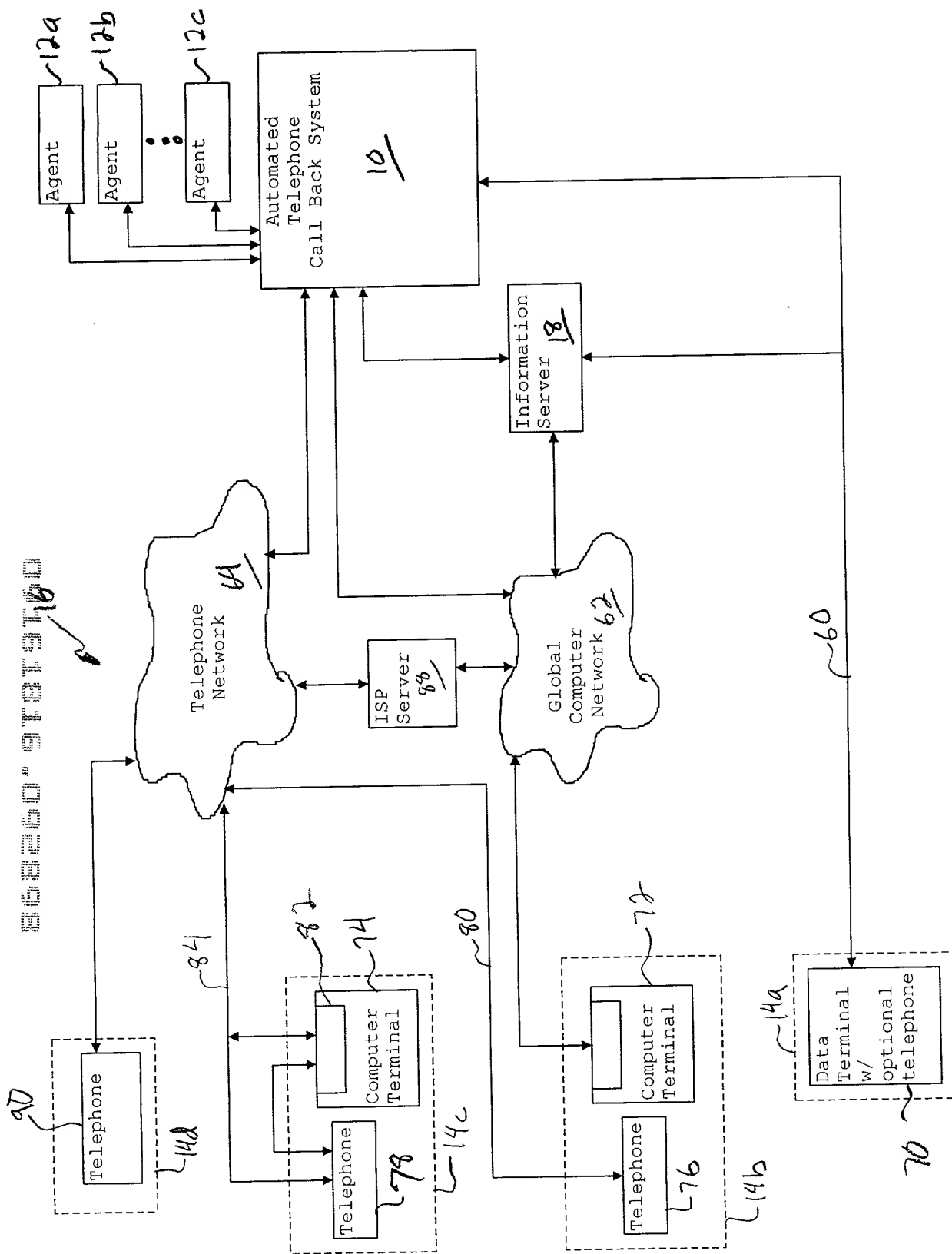
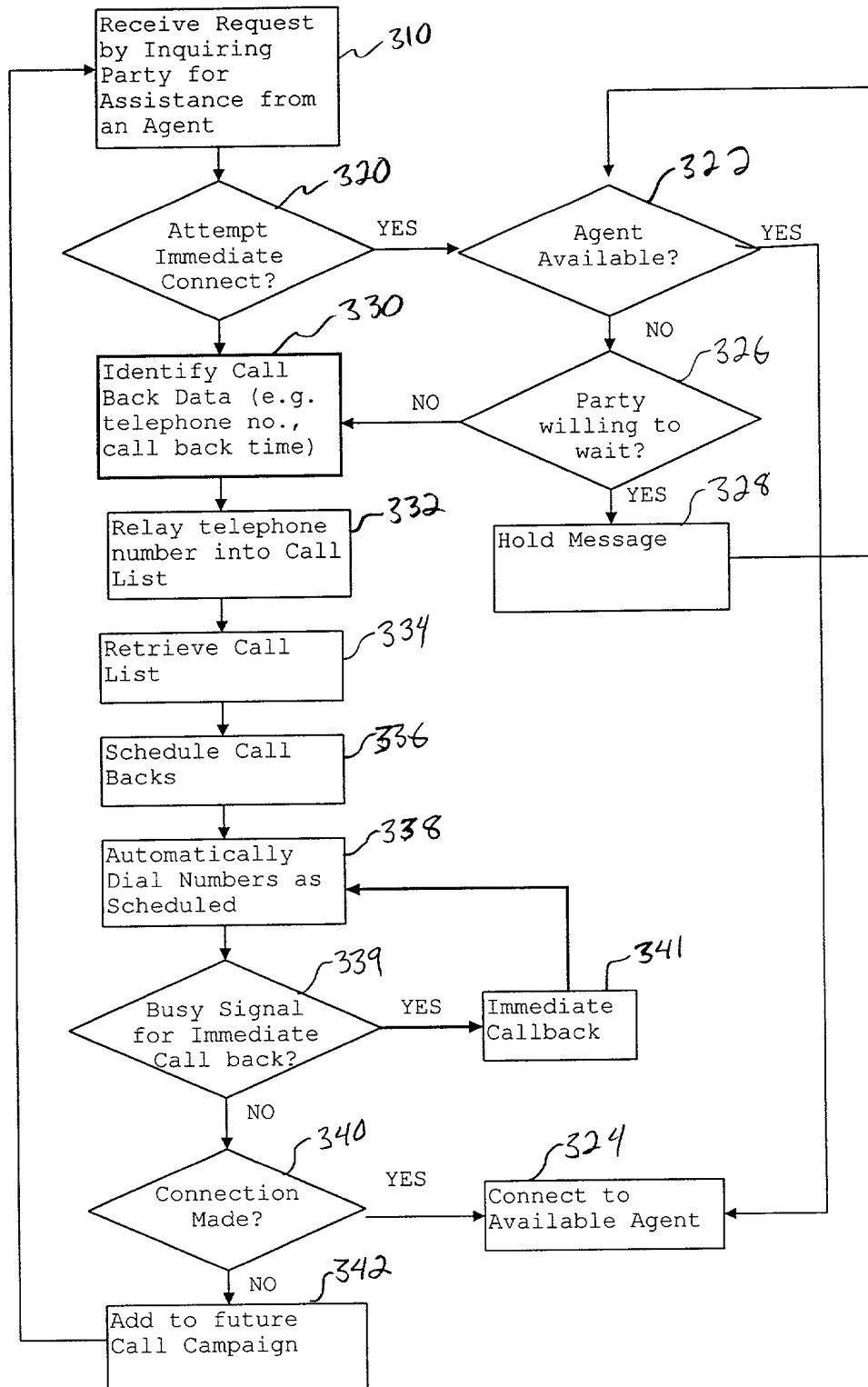


Fig. 3



300

Fig. 4

DECLARATION AND POWER OF ATTORNEY

As a below-named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name;

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled:

SYSTEM AND METHOD FOR PROVIDING AN AUTOMATIC TELEPHONE CALL BACK FROM INFORMATION PROVIDED AT A DATA TERMINAL

the specification of which (check one):

[X] is attached hereto. [ ] was filed \_\_\_\_\_ as Serial No. \_\_\_\_\_; amended on \_\_\_\_\_ (if applicable).

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information which is material to the examination of this application in accordance with Title 37, Code of Federal Regulations §1.56(a).

I hereby claim foreign priority benefits under Title 35 USC 119 of any foreign application(s) for patent or inventor's certificate listed below and have also identified below any foreign application for patent or inventor's certificate having a filing date before that of the application on which priority is claimed:

<u>Prior Foreign Application(s)</u>		<u>Date Filed</u>	<u>Priority Claimed</u>
[ ]	[ ]		
(Number)	(Country)	(Day/Month/Year)	Yes No
(Number)	(Country)	(Day/Month/Year)	Yes No

I hereby claim the benefit under Title 35 USC 120 of any United States application(s) listed below and insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States application in the manner provided by the first paragraph of Title 35 USC 112, I acknowledge the duty to disclose material information as defined in Title 37, Code of Federal Regulations, §1.56(a) which occurred between the filing date of the prior application and the national or PCT international filing date of this application:

(Application Serial No.)	(Filing Date)	(Patented/pending/abandoned)
(Application Serial No.)	(Filing Date)	(Patented/pending/abandoned)



I hereby claim the benefit under Title 35 USC 119(e) of any United States provisional application(s) listed below:

(Application Serial No.) (Filing Date) (Patented/pending/abandoned)

**POWER OF ATTORNEY:** As a named inventor, I hereby appoint the following attorney(s) to prosecute this application and transact all business connected therewith in the Patent and Trademark Office, and to file with the USRO any International Application based thereon.

Daniel J. Bourque, 35,457

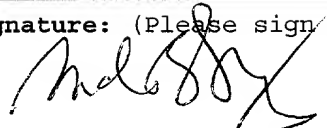
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I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

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